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# **North Dakota Legislative Council**

## **Business Case**

### **Legislative Application Replacement Project**

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August 1, 2005

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# 1 Project Description

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The current information technology systems in the North Dakota Legislative Branch have been designed and built over a period of several years beginning in the 1960's. The resulting custom-built applications are based on the unique requirements of the North Dakota legislative process and fully support the various activities. The longevity of the systems has provided time to correct, modify and enhance the systems to provide much of the required functionality. Most of the systems are mainframe-based and are hosted by North Dakota Information Technology Department (ITD). Many other computer systems were developed over time to support the entire legislative process.

By replacing the current legislative applications, North Dakota Legislative Council (NDLC) is expected to yield business value in the following ways:

- Reduce risk
- Enhance ease-of-use
- Reduce cost
- Enhance level of service to North Dakota legislators and other stakeholders.

# 2 Business Need/Problem

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The problem of technology obsolescence and loss of knowledgeable support personnel affects the State of North Dakota legislature and related support agencies. The impact is a system that will be unsupportable (operations and maintenance) in the near future and a significant risk of loss of critical systems that support the legislative process.

NDLC is at great risk of having systems that are unsupportable in the near future due to the age (25+ years old) of key computer programs and related technologies. In addition, NDLC is in danger of losing support for these mission-critical systems due to the loss of key personnel (retirement or job change) and since certain critical system technologies (BookMaster, ISPF, REXX) may become, in practice, unsupported within the next four years.

The risk of loss of support is amplified by the strong possibility that it may take as many as 4 years to completely renovate the entire software platform. A new solution and renovation plan should be developed and implemented as soon as possible.

There are a number of stakeholders with an interest in the implementation project and not all of them are end users. The following table presents a summary list of these major stakeholders.

Name	Description	Responsibilities
Legislators	People who propose legislation and decide on proposed law changes	Draft, review, amend, adopt and otherwise manage changes to state law and related code; most often access and input to systems through administrators
NDLC Executives	Primary decision maker	Manage overall budget and direction of NDLC staff and

		responsibilities
NDLC Support Staff	Primary data entry operators and administrators of the legislative systems	Entry and processing of all bill drafting information; processing of journal and web deliverables; Overall administration responsibility for these systems;
NDLC Professional Staff	Legal, Fiscal, and Information Technology staff	Provide Legal, Fiscal, and IT services for the Legislative Branch
ITD	Technical support and software development	Provide operations support for entire system; system maintenance and enhancement of certain parts of the system; provide guidance on ND standards
Printer	State Printing office	Provide paper prints of all requested documents
Support Staff Administrator	Primary day-to-day administrator of bill drafting business process	Reviews work requests and assigns work to support staff; makes some decisions on content and format
Publisher	Lexis Law, Third-party processor of legal documentation	Produces bound copies of various documents, including the Century Code and related supplements
Committee Clerk	Person who records activities of a legislative committee	Uses Journal system to record committee activities
Journal Reporter	One person for each chamber (House, Senate) who records chamber activities	Uses Journal or Chamber Message system to record activities and actions of the respective chamber; also responsible for the formation of the daily journal
State Agency	Various users who have access to related information via state Intranet	Access various information through electronic means or via paper copy
Public	Various people interested in legislative activities or actions	Access printed documents via the web or paper copy

### 3 Solution

A successful solution would be the replacement of software systems with a modern, user-friendly editing product, replacement of the mainframe-based print rendering engine with a cost effective rendering engine, and the replacement of legacy custom code with new solutions developed by a team of State and 3<sup>rd</sup>-party developers using modern tools, languages and techniques.

After conducting research, discussing implementations with other states, and reviewing potential vendor tools and solutions, the recommendation for replacing the legislative systems within North Dakota is to purchase commercial off-the-shelf (COTS) components as much as possible. Through systems integration efforts, a robust solution will be developed using modern tools, languages, and techniques. All Legislative Session applications (Bill Drafting, Bill Status, LAWS, etc.) and miscellaneous applications (Lotus Notes applications, etc.) should be replaced together, over the next two biennia. Although the Administrative Code and Budget Status systems should not be replaced at this time, they will be more tightly integrated with the new systems.

The recommended solution includes technologies approved by the Enterprise Architecture process and listed in the Application Development Tools/Language Standard. An assumption is made that most of the integration and development

effort would be performed by qualified professionals with experience in the tools and architecture selected.

## **4 Consistency/Fit with NDLC Mission**

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The Legislative Council by statute consists of 17 legislators, including the majority and minority leaders of both houses and the Speaker of the House. The Speaker appoints five other representatives, two from the majority and three from the minority as recommended by the majority and minority leaders, respectively. The Lieutenant Governor, as President of the Senate, appoints three senators from the majority and two from the minority as recommended by the majority and minority leaders, respectively.

The Legislative Council staff consists of attorneys, accountants, researchers, and auxiliary personnel who are hired and who serve on a strictly nonpartisan basis. In addition to conducting studies, through its committees, the Council and its staff provide a wide range of services to legislators, other state agencies, and the public. Attorneys on the staff provide legal advice and counsel on legislative matters to legislators and legislative committees. The Council supervises the publication of the Session Laws, the North Dakota Century Code, and the North Dakota Administrative Code. The Council has on its staff the Legislative Budget Analyst and Auditor and assistants who provide technical assistance to Council committees and legislators and who review audit reports for the Legislative Audit and Fiscal Review Committee. The Council provides computer services to the legislative branch, including research and bill drafting capabilities. The Council's library contains a wide variety of materials and reference documents, many of which are not available from other sources.

The current information technology systems that support the NDLC mission have been designed and built over a period of several years to support the entire legislative process. The resulting custom-built applications are based on the unique requirements of the North Dakota legislative process and fully support the various activities.

## **5 Cost Benefit Analysis**

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### ***5.1 Anticipated Benefits***

The current systems provide most necessary functionality to support the legislative process. However, the need for replacing the system revolves around risks of maintaining a legacy system.

The anticipated benefits include:

1. Renovate system technologies to meet current technology requirements and position the product for better long-term support.
2. Provide XML editor program for bill drafting and journal modules

3. Automate the incorporation of budget status information into the bill drafting system
4. Lower the system operation costs

## 5.2 Cost Estimate

The project can be divided into two phases. Phase 1 is the Analysis and Design phase and must be nearly completed prior to startup of other phases. Phase 2 represents the implementation effort and are further defined as Phase 2a (2005-2007 portion of the implementation effort) and Phase 2b (2007-2009 portion of the implementation effort).

The following project budget guidelines for the 2005-2007 and 2007-2009 biennia were formed after high-level analysis of the North Dakota legislative processes and systems. NDLC personnel are not included in the budget costs.

Project Implementation Costs				
Project Component	Scope	Project Timeline	2005-2007 Cost	2007-2009 Cost
Phase 1 - Technology research, system analysis and design, project management	All applications except Budget Status and Administrative Code	- Must be first Phase - 8 to 10 month effort	\$840,000	
Phase 2a - Installation, integration, testing, data conversion, training, project management, hardware and software	TBD	- Phase 2a is the 2005-2007 portion of the implementation effort	\$360,000	
Phase 2b - Installation, integration, testing, data conversion, training, project management, hardware and software	TBD	- Phase 2b is the 2007-2009 portion of the implementation effort		\$3,700,000
<b>Total 2005-2007 Budget</b>			<b>\$1,200,000</b>	
<b>Total 2007-2009 Budget</b>				<b>\$3,700,000</b>

## 5.3 Cost/Benefit Analysis

The table below shows the 10-year costs, by biennium, of replacing the current applications over the next two biennia.

Projected Costs for <u>Replacing</u> Current Legislative Applications over 2 biennia						
Cost Component	2005-2007	2007-2009	2009-2011	2011-2013	2013-2015	10-Year Total
Hardware Replacement		\$10,000	\$35,000	\$25,000	\$40,000	\$110,000
Software Maintenance		\$30,000	\$35,000	\$45,000	\$50,000	\$160,000
Application Support			\$330,000	\$370,000	\$400,000	\$1,100,000
Implementation Costs	\$1,200,000	\$3,700,000				\$4,900,000
Current Systems Costs	\$1,200,000	\$800,000				\$2,000,000
<b>Total Biennium Cost</b>	<b>\$2,400,000</b>	<b>\$4,540,000</b>	<b>\$400,000</b>	<b>\$440,000</b>	<b>\$490,000</b>	<b>\$8,270,000</b>

The table below shows the projected 10-year costs, by biennium, of keeping the current systems in place.

Projected Costs for <u>Remaining</u> with Current Legislative Applications						
Cost Component	2005-2007	2007-2009	2009-2011	2011-2013	2013-2015	10-Year Total
Hardware Replacement	\$15,000	\$30,000	\$20,000	\$25,000	\$20,000	\$110,000
Software Maintenance	\$15,000	\$20,000	\$20,000	\$25,000	\$30,000	\$110,000
Application Support – ITD and contractors	\$1,300,000	\$1,500,000	\$1,700,000	\$1,900,000	\$2,100,000	\$8,500,000
ITD Hosting Costs	\$400,000	\$400,000	\$400,000	\$400,000	\$400,000	\$2,000,000
<b>Total Biennium Cost</b>	<b>\$1,730,000</b>	<b>\$1,950,000</b>	<b>\$2,140,000</b>	<b>\$2,350,000</b>	<b>\$2,550,000</b>	<b>\$10,720,000</b>

## 6 Project Risks

A risk is a possible undesirable and unplanned event that could result in the project not meeting one or more of its objectives (e.g. functionality, cost, or schedule). Risks associated with implementing this project and the related mitigation actions are identified below.

Risk		Description/Definition	Risk Management
Impact On	Changes in Scope	Scope changes can take several forms, including the functions to be addressed, the number of organization units to be involved, the level of detail of products, the specific products to be provided, the allocation of resources, etc. Each change has the potential to put timely project completion at risk, or to cause rework or to examine task/product incompatibilities.	<b>Mitigation Actions:</b> Implement and ensure strict change control processes are adhered to at all times.  <b>Contingency Plan:</b> Call an emergency meeting of the project Executive Steering Group members to address issues and define impact at a contractual level.
	Probability: M		
	Cost: H		
	Schedule: H		
	Function: M		

Risk		Description/Definition	Risk Management
Impact On	Schedule Slippage	Schedule slippage is the failure to deliver intended artifacts according to the schedule in the project plan. NDLC, ITD, and the selected vendor can cause slippage. Such slippage can have a domino effect on subsequent tasks in the project and can put actions and benefits dependent upon timely project completion in jeopardy.	<b>Mitigation Actions:</b> Weekly status reports and meetings between Project Managers that will address schedule, identifying any expected changes to deliverable dates. Actions to take will be defined at these meetings.  <b>Contingency Plan:</b> Increase resource allocation to the project to bring the schedule back on track.
	Probability: L		
	Cost: M		
	Schedule: H		
	Function: L		

Risk		Description/Definition	Risk Management
Resource Availability, Coordination and Diversion		Insufficient resources mean that appropriately skilled individuals are not available when needed. Lack of the necessary skills on the project team not only causes a shortage of resources needed to get the work done, but can reduce the productivity of other team members. Reassignment of team members to another team or to work outside the project is costly in terms of time lost in obtaining a replacement and learning curve for the replacement.	<b>Mitigation Actions:</b> Resources assigned to this project must make the project a top priority at all times. Requests for time outside of the project must only be agreed to after assurance that the project timeline is not impacted.  <b>Contingency Plan:</b> Formally raise issues to the responsible party’s executive team. If commitment cannot be maintained, additional resources may be assigned to the project to fill the resource gap.
Probability: H			
Impact On	Cost: H		
	Schedule: H		
	Function: M		

Risk		Description/Definition	Risk Management
Product Integration and Conflicting Priorities		The technical dependencies within the project may be of a level of complexity or require a degree of integration that risks the overall success of the project. If priorities conflict, one team may emphasize timing, detail or quality in a way that is incompatible with the needs of the other team.	<b>Mitigation Actions:</b> Extreme focus on an integrated system design with continuous and direct communication between developers must be maintained. Monthly technology planning and review meetings between senior technical project members from NDLC, ITD, and the selected vendor.  <b>Contingency Plan:</b> Call an emergency meeting of the project Executive Steering Group members to address issues and define impact at a contractual level.
Probability: M			
Impact On	Cost: H		
	Schedule: H		
	Function: M		

Risk		Description/Definition	Risk Management
Missed/Misunderstood Requirements During Spec Phase		It is crucial that all questions are asked and all information required for the configuration of the system be addressed during the specification phase. If items are missed or misunderstood, the project timelines could slip or rework may be required.	<b>Mitigation Actions:</b> Implementing peer-review strategy. Specification walkthroughs prior to sign-off including NDLC and the selected vendor.  <b>Contingency Plan:</b> Use change control process to define specification criteria.
Probability: M			
Impact On	Cost: H		
	Schedule: H		
	Function: M		



Risk		Description/Definition	Risk Management
Data Conversion Delays		The complexity of the data conversion, such as the amount and current location of data, combined with the need to ensure clean data can have an impact on the project.	<b>Mitigation Actions:</b> Cleaning of data prior to conversion.  <b>Contingency Plan:</b>
Probability: L			
Impact On	Cost: H		
	Schedule: M		
	Function: L		

Risk		Description/Definition	Risk Management
Production Environment		The production environment must be capable of accommodating the new system or system changes.	<b>Mitigation Actions:</b> Take adequate measures and conduct tests to ensure that the production environment is stable enough to support new developments.  <b>Contingency Plan:</b> Call an emergency meeting of the project Executive Steering Group members to address issues and define impact at a contractual level.
Probability: L			
Impact On	Cost: M		
	Schedule: M		
	Function: M		

Risk		Description/Definition	Risk Management
Withheld Information		Information regarding current systems and technology withheld from the project team may severely jeopardize the accuracy of the project results. Information can be deliberately withheld, withheld through carelessness or the failure to understand what is needed. In any case, the impact is the same.	<b>Mitigation Actions:</b> <b>Contingency Plan:</b>
Probability: L			
Impact On	Cost: M		
	Schedule: M		
	Function: H		